



National Weather Service

Storm Data and Unusual Weather Phenomena



January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

WIZ052-066-069

Sheboygan - Milwaukee - Rock

02 1200CST
04 0200CST

0 0

Record Heat

Persistent southwest winds pulled warm air into southeast Wisconsin over a 2 day period of time, which was enough to set some new temperature records. The city of Sheboygan (Sheboygan Co.) set a new daily record high of 47 on the 2nd, and another new daily record high of 54 on the 3rd. The old record for the 3rd was 46. Janesville's (Rock Co.) high temperature of 54 on the 3rd broke the old daily maximum of 48 set back in 1952. The city of Milwaukee registered 53 degrees at 0200 CST on the 4th, breaking the old daily record of 50 set back in 1950. Normal maximum temperatures in early January are 26. Other locations in southcentral and southeast Wisconsin shared the warmth. Noteworthy was the fact that Lake Mendota and Lake Monona in Madison (Dane Co.) were still unfrozen. The Merrimac Ferry (Sauk Co.) broke its record late winter closing date by continuing trips across the unfrozen Wisconsin River into the first few days of January. The previous late closing date was December 23, 1948. The ferry eventually ceased operations on January 13th, thanks to El Nino.

WIZ046>047-056

Marquette - Green Lake - Sauk

04 1500CST
05 0300CST

0 0

Ice Storm

An ice storm hit westcentral through northeast Wisconsin, just brushing three southcentral counties. The responsible low pressure tracked along a line from Dubuque, IA northeast through Fond du Lac county. Light to occasionally moderate rain combined with temperatures around 30 to produce ice accumulations of 1/4 to 1/2 inch. Icy road surfaces caused about 150 motor vehicle accidents, including several roll-overs. Only scattered power outages and downed tree limbs were noted thanks to light northeast winds of 5 to 10 mph. Consequently, there wasn't widespread wind stress on ice-covered power lines and tree limbs.

WIZ051>052-058>060-
064>066-069>072

Fond Du Lac - Sheboygan - Dodge - Washington - Ozaukee - Jefferson - Waukesha - Milwaukee - Rock - Walworth -
Racine - Kenosha

08 1330CST
09 1200CST

0 0

Winter Storm

A major winter storm brought heavy snow and gusty winds to 40 mph to the eastern 1/3 of Wisconsin. The responsible low pressure moved north along the east shore of Lake Michigan. Snow accumulations of 8 to almost 14 inches were the greatest amounts to date for any single storm during the 1997-98 winter season. In spite of the high moisture content of the snow, gusty northeast winds caused considerable blowing and drifting snow which hampered plowing activities. The snowfall was occasionally moderate to heavy with accumulations of 1 to 2 inches per hour while visibilities were occasionally below 1/4 mile. Predictably, hundreds of motor vehicle accidents were reported due to icy or snow covered roads. A major multi-vehicle accident on I-43 in Ozaukee County closed the Interstate for about 10 hours. Many airline flights were delayed at Milwaukee's Mitchell Field. Many trees were damaged by the heavy snow, and several power lines were downed. About 4000 customers were without electrical power in Sheboygan, Ozaukee, and Milwaukee counties. Meanwhile, many schools closed in the early afternoon hours, while several shopping malls shut their doors by mid-afternoon. The 24 hours snowfall total of 12.4 inches in Milwaukee was the greatest 24 hour accumulation in the past 10 years. It was also the 14th greatest 24-hour snowfall on record for Milwaukee.

Specific snow totals were: 13.7 inches in Cedarburg (Ozaukee Co.), 12.4 inches in Milwaukee (Milwaukee Co.), 11.5 inches at the NWS Forecast Office southeast of Sullivan (Jefferson Co.), 10.8 inches in West Bend (Washington Co.), 10.5 inches in Sheboygan (Sheboygan Co.), 10.0 inches in Waukesha (Waukesha Co.), 9.5 inches in Burlington (Racine Co.), 9.0 inches in Lake Geneva (Walworth Co.), 8.4 inches in Janesville (Rock Co.), 8.0 inches in the northwest corner of Kenosha County, and 8.0 inches in the southeast corner of Fond du Lac county.



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WISCONSIN, Southeast

WIZ063

Dane

20 2200CST
21 1000CST

0

0

Heavy Snow

A minimal heavy snow event affected parts of southcentral Wisconsin as an inverted trough of low pressure tracked east across Wisconsin. Maximum accumulations of 6.7 inches were reported in Middleton (Dane Co.), 6.2 inches in Madison (Dane Co.), and 6.0 inches in Lake Mills (Jefferson Co.). Otherwise, snow accumulations were generally in the 3 to 5 inch range across the remainder of southcentral and southeast Wisconsin. The snow was somewhat fluffy, but reduced visibilities to 1/4 to 1/2 mile at times. This led to about 100 motor vehicle accidents, including a few roll-overs.



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March 1998

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WISCONSIN, Southeast

WIZ046>047-056>058-062>063-067>068 **Marquette - Green Lake - Sauk - Columbia - Dodge - Iowa - Dane - Lafayette - Green**

08	0400CST	0	0	Winter Storm
09	0900CST			

A powerful winter storm, possessing near blizzard conditions, brought parts of southcentral and southeast Wisconsin to a standstill. The combination of heavy, wet snow, and northeast winds gusting to 40 to 50 mph, reduced visibilities occasionally to below 1/4 mile and created huge drifts of 8 to 15 feet in areas west and southwest of Madison (Dane Co.). Based on newspaper accounts, there were probably 800 motor vehicle accidents, dozens of toppled power lines, many school closings, and many road closures. Interstate 90/94 and State Highway 51 north of Madison were closed at the height of the storm during the afternoon and evening hours on the 30th. In addition, there were many airline flights and other commercial activities postponed or cancelled.

Specific snowfall totals include: 10.5 inches in northeast Iowa county and northcentral Dane Co.; 10.2 inches at Middleton (Dane Co.); 10 inches in northwest Lafayette, southern Sauk, and southern Columbia counties; 9 to 10 inches in the northern portions of Marquette and Green Lake counties; 7 to 8 inches in westcentral Dodge and northwest Green counties; and 7.3 inches at the Madison/Dane County Regional Airport.

The storm was the result of a "pan-handle hook" low pressure which traveled from southeast Colorado to northeast Texas and then recurved back through northwest Ohio. Copious amounts of Gulf of Mexico moisture were available for the storm (dewpoints in the middle 50s into southern Indiana).

WIZ051>052-059>060-064>066-069>072 **Fond Du Lac - Sheboygan - Washington - Ozaukee - Jefferson - Waukesha - Milwaukee - Rock - Walworth - Racine - Kenosha**

08	1800CST	0	0	215K	High Wind
09	1000CST				

Powerful winds, gusting to 64 mph, raked parts of eastcentral and southeast Wisconsin, resulting in many cases of toppled trees and powerlines, as well as some structural damage. In addition, snow accumulations of 1 to 5 inches occurred. The high winds were part of the winter storm system which left 10 to 12 inches of snow over southwest, southcentral and central Wisconsin. In the city of Sheboygan, the winds blew over a 16 foot by 16 foot construction wall. In addition, large tree branches fell on a couple cars in Sheboygan. In Fond du Lac, Ozaukee, Jefferson, Waukesha, and Milwaukee counties, about 6,000 customers were without electrical power after the high winds toppled large trees or tree branches onto power lines. In Hartford (Washington Co.), the high winds knocked large trees branches on to a home's roof and totaled a parked car. The high winds pushed large trees onto two homes in the Lake Geneva (Walworth Co.) area. One sustained moderate damage, while the other one had minor damage. There were many other reports of uprooted trees and downed power lines in Walworth county. In addition, the winds peeled a piece of plywood off a building in Deavan (Walworth Co.). It was the same story in Rock county with regards to trees and powerlines. A peak gust of 64 mph was registered at the Rock County Airport (JVL).

Racine and Kenosha counties appeared to suffer the wrath of the storm more so than other counties. Groaning winds (up to 58 mph on the Racine lakefront) combined with snow and sleet to bring down many trees and powerlines across the two counties. Nearly 34,000 customers were without electrical service or heat on the 9th. Some schools, factories, and government facilities were also closed. Huge waves of 10 to 12 feet pounded the lakeshore areas, resulting in beach/shoreline erosion. Also, large rocks and ice chunks were pushed by the waves onto nearby roads. The high winds even pushed a Racine police squad car sideways several feet on an icy road. At least 400 motor vehicle accidents were reported in these two counties due to the slippery roads. In downtown Racine, some siding on a 153 foot tall buildings was loosened by the winds, but no one was injured.



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WISCONSIN, Southeast

WIZ051-066-071>072

Fond Du Lac - Milwaukee - Racine - Kenosha

26	0600CST	0	0	Record Warmth
31	1900CST			

The combination of sunshine and dry southwest winds of 15 to 30 mph was enough to push temperatures to new record levels across parts of southeast and eastcentral Wisconsin. Milwaukee Mitchell Field peaked at 75 degrees, breaking the old daily record of 72 set in 1968. The city of Fond du Lac peaked at 72 degrees, breaking the old one of 70 set in 1968. Racine also set a new record of 76, while in Kenosha, a max of 74 broke the old record of 72. This was the first time this part of the state was in the 70s since October 13, 1997. In addition, Milwaukee set a new record high minimum of 57 at 0640 CST on the 26th, breaking the old record of 49 set back in 1945. Milwaukee also tied the record high minimum of 58 set in 1989 for the next day, March 27th.

Dane County

Madison	30	0600CST	0	0	Urban/Sml Stream Fld
	31	1200CST			

Green County

Monticello	30	0600CST	0	0	Urban/Sml Stream Fld
	31	1200CST			

Iowa County

Dodgeville	30	0600CST	0	0	10K	Urban/Sml Stream Fld
	31	1200CST				

Lafayette County

Calamine	30	0600CST	0	0	Urban/Sml Stream Fld
	31	1200CST			

Sauk County

1 NE Hillpt to 4 E Baraboo	30	0600CST	0	0	Urban/Sml Stream Fld
	31	1200CST			

Sheboygan County

4 N Johnsonville to Sheboygan	30	0600CST	0	0	Urban/Sml Stream Fld
	31	1200CST			

Sheboygan County

1 NW Elkhart Lake	30	1810CST	0	0	Hail (1.00)
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Sheboygan County

1.3 S Hingham	30	1815CST	0	0	Hail (0.75)
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Washington County

Kewaskum	30	1818CST	0	0	Hail (1.00)
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A series of showers and thunderstorms dumped heavy rains and small hail (1/4 to 1/2 inch in diameter) on already saturated soils over southcentral, southeast, and eastcentral Wisconsin, resulting in scattered reports of urban and small stream flooding. Most of the storms occurred between 1500CST and 2345CST on the 30th. The storms became severe when they deposited large hail at a couple locations in Sheboygan county, and one in Washington county.

The flooding wasn't serious, but it did cause an inconvenience for many people. Rainfall totals between 0600CST on the 30th to 0600CST on the 31st were about 4 inches north of Johnsonville (Sheboygan Co.), 3.8 inches in Baraboo (Sauk Co.), 3.7 inches in Dodgeville (Iowa Co.), 3.6 inches in Portage (Columbia Co.), 3.5 inches in Sheboygan (Sheboygan Co.), 3.4 inches in Wisconsin Dells (Columbia Co.), 3.1 inches in Fond du Lac (Fond du Lac Co.), and 3.03 inches in Madison (Dane Co.). Totals of 2 to 3 inches fell over the southeast counties between Milwaukee and Kenosha.

Madison (Dane Co.) police reported minor urban street flooding and brief, scattered power outages during the evening of March 30th as thunderstorms rolled through the city. Lowlands flooded east of Monticello (Green Co.) as the Little Sugar river left its banks. Some homes and one business in Monticello reported minor flooding in basements. Some roads in Dodgeville (Iowa Co.) were impassable as water filled area streets. A couple gravel roads near Dodgeville had washouts due to the flooding waters. Observed rainfall rates were as much as 1 inch in 10 minutes in southwest Iowa county near Livingston. The ground was covered white with small hail in the Dodgeville area. Rising waters on the Pecatonica River in Lafayette county resulted in the closure of Ferndale Rd. north of Calamine, and County H near Blanchardville. West of Rock Springs (Sauk Co.), some roads were closed due to high water levels at the junction of Narrows Creek and the Baraboo River. Lowland flooding was reported along much of Narrows Creek and along the Baraboo River from Reedsburg (Sauk Co.) to east of the city of Baraboo. Manhole covers "popped"



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		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

WISCONSIN, Southeast

in Baraboo. A few motorists got stuck in high waters on Highway 154 west of Rock Springs. At Lakeland College north of Johnsonville (Sheboygan Co.), the heavy rains flooded the campus wastewater treatment building, submerged the pumps and motors and causing the entire system to shut down. This then resulted in a sewage backup problem, and classes were cancelled for one day. On the west side of the city of Sheboygan, up to 7 inches of water covered some roads.

Many of the mainstem rivers and other streams in southcentral, southeast, and eastcentral Wisconsin rose to bankfull levels or exceeded them by 1 to 3 feet due to the March 30-31 heavy rains on top of saturated soils. Although flooding was rated as minor, water levels remained at or near flood stage from the end of March through much of April. In fact, at some scattered spots, water levels remained high until May 11th!



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April 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

WIZ052

Sheboygan

01 0000CST
02 0600CST

0 0 5K Flood

Several rounds of thunderstorms with heavy rains changed into a steady all-day rain, resulting in flooding of rivers and streams in Sheboygan County. Up to 3.5 inches of rain fell in the city of Sheboygan Falls, on top of a saturated ground. The Sheboygan River at Sheboygan Falls flooded adjacent low-lying roads, fields, and parks, resulting in minor damage. In the city of Sheboygan, the Sheboygan River crested at 10.45 feet at the start of the month, or 2.45 feet over flood stage. It went below flood stage at 0600CST on the 2nd.

Jefferson County

1 NE Johnson Creek

01 0000CST
02 1000CST

0 0 3K Heavy Rain

Additional heavy rains of 1 to 1.50 inches on top of a saturated ground resulted in a mudslide onto Old Highway 26 just north of Interstate 94 near Johnson Creek. The mudslide closed the Highway on the 1st, and it was cleaned up by the morning of April 2nd. The mudslide occurred at the construction site of a new outlet mall.

WIZ056

Sauk

01 0000CST
04 0945CST

0 0 5K Flood

Steady rains and some thunderstorms dumped 2 to 4 inches of rain over Sauk County on top of a saturated ground, resulting in scattered flooding reports. Highway 154 near Rock Springs was closed due to high water levels along Narrows Creek on April 1st. Other low-lying roads and farm fields along the Baraboo River experienced minor flooding. The Baraboo River at Baraboo crested at 19.57 feet at 1300CST on April 1st, or 3.57 feet above flood stage. It went below flood stage at 0945CST on the 4th.

Jefferson County

2 SE Cambridge

15 1435CST

0 0 100K Lightning

Lightning struck a home on the shore of Lake Ripley in the Town of Oakland as thunderstorms rolled through the area. A fire resulted, but was quickly contained. Structural and smoke damage rendered the home unliveable for several weeks.

Dodge County

2 SE Randolph

15 2100CST

0 0 2K Lightning

Lightning struck a tree and traveled underground to a home near Randolph, ripping open the home's telephone and cable boxes, and damaging the bricks surrounding a garden. The interior of the home sustained smoke damage, but there was no fire.



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May 1998

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					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

Rock County Newark	12	1740CST			0	0	2K		Thunderstorm Wind
Rock County Footville	12	1755CST			0	0	2K		Thunderstorm Wind
Sauk County 2 S Hillpt to 3 NE Loganville	12	1930CST			0	0	17K	30K	Hail (1.75)
Green Lake County 1 S Manchester	12	1950CST 1951CST			0	0			Hail (0.88)
Rock County Beloit	12	2010CST			0	0	10K		Lightning
Kenosha County Kenosha	12	2130CST 2259CST			0	0			Urban/Sml Stream Fld
Waukesha County Sussex	12	2330CST			0	0	2K		Lightning
Ozaukee County Port Washington	13	0005CST			0	0	15K		Lightning

Classic summer thunderstorms became severe as they rumbled across southern Wisconsin during the evening hours to just past midnight. Thunderstorm winds downed trees in Rock county near Newark and Footville with lightning igniting a home fire in Beloit. In Sauk county severe hail mulched hay fields and damaged a home near Loganville. Large hail was also reported near Manchester in Green Lake county. Lightning struck an apartment building in Sussex (Washington Co.) and started a damaging fire. Lightning hit a steeple in Port Washington (Ozaukee Co.) and caused damage to the roof and electrical hardware inside the building. Heavy rain produced urban flooding in Kenosha (Kenosha Co.) where 1.5 inches of rainfall resulted in 1 foot standing water. Also, 1.19 inches of rain was measured in Janesville (Rock Co.). Finally, electrical services were disrupted to 16,000 customers in Rock, Kenosha, Jefferson and Racine counties due to downed power lines and lightning damage.

Lafayette County 1 SW Benton to 5 NNW Calamine	15	1845CST 1915CST	20	150	0	11	1.7M	140K	Tornado (F2)
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A supercell thunderstorm, after dropping a couple tornadoes in northeast Iowa, eventually moved northeast into Lafayette county, creating another tornado. This tornado touched down just southwest of Benton and hopped/skipped northeast for 20 miles. It caused moderate to severe damage to 40 different farms and their outbuildings, and homes. Numerous power lines were downed. Eleven people were injured: 2 children near Cuba city, 3 children southwest of Truman, and 6 adults in a vehicle on Highway 81 south of Benton. Several farm fields sustained damage.

Iowa County Mineral Pt to 3.5 ENE Mineral Pt	15	1915CST			0	0	6K		Thunderstorm Wind
Sauk County 3 SW Reedsburg	15	1927CST			0	0	0.50K		Thunderstorm Wind (G56)
Lafayette County 2 E Darlington	15	2005CST			0	0			Hail (0.75)
Rock County 1 N Janesville	15	2005CST			0	0	0.50K		Thunderstorm Wind
Columbia County 2 W Portage to 5 SE Wisconsin Dells	15	2009CST			0	0	7K		Thunderstorm Wind



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<u>WISCONSIN, Southeast</u>									
Columbia County 3 W Columbus	15	2025CST			0	0	3K		Thunderstorm Wind
Dane County Mt Horeb	15	2030CST			0	0			Hail (0.75)
Green County New Glarus	15	2030CST			0	0	3K		Thunderstorm Wind
Rock County Beloit	15	2030CST			0	0	5K		Thunderstorm Wind
Green County Brodhead	15	2045CST			0	0	1K		Thunderstorm Wind
Green Lake County Green Lake	15	2058CST			0	0	2K		Thunderstorm Wind
Jefferson County Lake Mills	15	2100CST			0	0	0.50K		Thunderstorm Wind (G52)
Fond Du Lac County Ripon	15	2106CST			0	0	20K		Thunderstorm Wind
Dodge County Mayville	15	2115CST			0	0	30K		Thunderstorm Wind
Walworth County Walworth to Williams Bay	15	2117CST 2127CST			0	0	12K		Thunderstorm Wind
Waukesha County 1 W Eagle	15	2130CST			0	0	1K		Thunderstorm Wind
Dodge County Juneau	15	2133CST			0	0	1K		Thunderstorm Wind
Walworth County Elkhorn	15	2140CST			0	0	4K		Thunderstorm Wind
Walworth County 1.5 W Sharon	15	2140CST			0	0	1K		Thunderstorm Wind
Walworth County La Grange	15	2145CST			0	0	1K		Thunderstorm Wind
Walworth County 4 SE Lake Geneva	15	2145CST			0	0	1K		Thunderstorm Wind
Waukesha County Muskego	15	2145CST			0	0	1K		Thunderstorm Wind
After the F2 tornado tore through Lafayette county a series of severe thunderstorms pummeled southcentral and southeast Wisconsin with numerous reports of tree limb damage and trees downed, which in turn downed a few power lines. The highest reported wind gust was 65 mph near Reedsburg (Sauk Co.). Other notable damage included roofs and doors ripped off of buildings in Mayville (Dodge Co.) and a deck ripped off a house in Ripon (Fond du Lac Co.) where several cars were also damaged by felled trees.									
Dane County 4 NE Sun Prairie	19	0200CST			0	0			Hail (0.88)
Lafayette County Woodford	19	0230CST			0	0			Hail (1.75)
Jefferson County Watertown Arpt	28	0630CST 0730CST			0	0			Urban/Sml Stream Fld



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Killed	Injured							
<u>WISCONSIN, Southeast</u>								
Lafayette County								
Benton to Leadmine	28	1754CST 1800CST			0	0	12K	Hail (0.75)
Sauk County								
3 S Reedsburg	28	1855CST			0	0		Thunderstorm Wind (G52)
Sauk County								
La Valle	28	1859CST			0	0		Thunderstorm Wind (G60)
Lafayette County								
2 S Seymour Corners to 2 N Darlington	28	1900CST 1915CST			0	0	3K	Thunderstorm Wind
Lafayette County								
4 SW Benton	28	1901CST			0	0		Funnel Cloud
Marquette County								
Briggsville	28	1930CST			0	0	1K	Thunderstorm Wind
Columbia County								
Portage	28	1940CST			0	0	2K	Thunderstorm Wind
Lafayette County								
South Wayne	28	1942CST			0	0	8K	Thunderstorm Wind
Dane County								
Madison	28	2000CST			0	0	1.5K	Thunderstorm Wind
Green County								
2 S Monroe	28	2000CST			0	0	1.6K	Thunderstorm Wind
Green County								
2 NW New Glarus	28	2000CST			0	0	1K	Thunderstorm Wind
Columbia County								
Cambria	28	2005CST			0	0		Hail (1.75)
Marquette County								
Westfield	28	2005CST			0	0	1K	Thunderstorm Wind
Dodge County								
Randolph	28	2012CST			0	0	2K	Thunderstorm Wind (G52)
Rock County								
Janesville	28	2030CST			0	0	7K	Thunderstorm Wind
Rock County								
3 SW Orfordville	28	2030CST			0	0	40K	Lightning
Dodge County								
Waupun	28	2032CST			0	0		Thunderstorm Wind (G56)
Jefferson County								
Jefferson to 1 S Hebron	28	2035CST			0	0	70K	Thunderstorm Wind
Fond Du Lac County								
Fond Du Lac	28	2044CST			0	0	3K	Thunderstorm Wind
Jefferson County								
3.8 SE Sullivan	28	2045CST			0	0		Thunderstorm Wind (G55)
Waukesha County								
3 SW Dousman	28	2052CST			0	0	8K	Thunderstorm Wind
Walworth County								
Elkhorn	28	2100CST			0	0	2K	Thunderstorm Wind (G68)



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WISCONSIN, Southeast

Walworth County							
Lake Geneva to Genoa City	28	2100CST 2115CST			0 0	3K	Thunderstorm Wind
Waukesha County							
Waukesha	28	2104CST			0 0	15K	Thunderstorm Wind (G61)
Waukesha County							
3 NE Delafield to Pewaukee	28	2115CST 2200CST			0 0	20K	Lightning
Milwaukee County							
West Allis to Hales Corners	28	2124CST 2130CST			0 0	4K	Thunderstorm Wind (G61)
Kenosha County							
Twin Lakes to Silver Lake	28	2125CST 2135CST			0 0	10K	Thunderstorm Wind
Sheboygan County							
Elkhart Lake	28	2125CST			0 0	7K	Thunderstorm Wind
Racine County							
Caledonia to Racine	28	2130CST 2140CST			0 0	100K	Thunderstorm Wind
Racine County							
Waterford to 5 SE Waterford	28	2130CST 2230CST			0 0		Urban/Sml Stream Fld
Milwaukee County							
Brown Deer	28	2145CST			0 0	0.80K	Thunderstorm Wind
Walworth County							
2 SW Whitewater	28	2155CST			0 0	4K	Thunderstorm Wind

Powerful thunderstorms packing damaging winds and heavy downpours resulted in numerous trees and power lines down across southcentral and southeast Wisconsin. The felled trees and power lines in Columbia county resulted in 1300 customers losing electrical power in that county. Some significant damage included roofs on two homes in Jefferson (Jefferson Co.) and damage to farm buildings near Hebron (Jefferson Co.). In one of these farm buildings, a stereo was "sucked" out and thrown 300 feet down the road. Lightning took a toll in Delafield to Pewaukee (Waukesha Co.) area where 4 homes were hit and 3000 electric customers were out of power. Near Dousman (Waukesha Co.), a toppled tree fell on and damaged a car. A gust of 70 mph was noted at the City of Waukesha Airport. In the city of Waukesha, a downed tree totaled a parked car. A tree fell on a home in rural Benton and in South Wayne, both in Lafayette county. Lightning struck a barn near Orfordville (Rock Co.) and the resultant fire damaged machinery and some hay. A boat on Lake Geneva (Big Foot Beach, Walworth Co.) was damaged when the winds lifted it out of its cradle. In Racine county a pole barn and 2 boats were damaged near Caledonia. Also in Racine county, 2 1/2 feet of standing water was reported on Highway 20.

Sauk County							
Countywide	31	0030CST 0100CST			0 4	914K 186K	Thunderstorm Wind
Marquette County							
Countywide	31	0040CST 0100CST			0 0	100K 50K	Thunderstorm Wind (G59)
Columbia County							
Countywide	31	0045CST 0125CST			0 1	3.6M 200K	Thunderstorm Wind
Green Lake County							
Countywide	31	0045CST 0120CST			0 0	5K	Thunderstorm Wind



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<u>WISCONSIN, Southeast</u>									
Iowa County Countywide	31	0045CST 0115CST			0	0	200K	50K	Thunderstorm Wind
Dane County Countywide	31	0100CST 0145CST			0	2	3.1M	150K	Thunderstorm Wind (G87)
Lafayette County Countywide	31	0100CST 0140CST			0	0	875K	100K	Thunderstorm Wind
Dodge County Countywide	31	0115CST 0145CST			0	8	3.7M	24K	Thunderstorm Wind (G111)
Fond Du Lac County Countywide	31	0115CST 0200CST			0	1	2M	75K	Thunderstorm Wind (G72)
Green County Countywide	31	0115CST 0200CST			0	0	20K		Thunderstorm Wind
Jefferson County Countywide	31	0123CST 0200CST			0	8	2.7M	200K	Thunderstorm Wind
Rock County Countywide	31	0130CST 0210CST			0	0	20K		Thunderstorm Wind
Sheboygan County Countywide	31	0130CST 0215CST			0	0	642K	150K	Thunderstorm Wind
Washington County Countywide	31	0145CST 0220CST			1	2	8.6M	100K	Thunderstorm Wind (G91)
	F48PH								
Waukesha County Countywide	31	0145CST 0230CST			0	0	6.7M	50K	Thunderstorm Wind (G70)
Ozaukee County Countywide	31	0150CST 0215CST			0	4	3.5M	300K	Thunderstorm Wind
Milwaukee County Countywide	31	0200CST 0240CST			0	0	19.2M		Thunderstorm Wind (G87)
Waukesha County Delafield	31	0200CST			0	0	4K		Lightning
Waukesha County 3 SE Delafield	31	0210CST			0	0	10K		Lightning
Waukesha County 2 SE Pewaukee	31	0215CST			0	0	3K		Lightning
Walworth County East Troy	31	0220CST			0	0	5K		Thunderstorm Wind
Walworth County Walworth	31	0225CST			0	0	5K		Thunderstorm Wind
Racine County 3 NE Caledonia	31	0230CST			0	0	1K		Thunderstorm Wind
Kenosha County Kenosha	31	0300CST			0	0	2K		Thunderstorm Wind



National Weather Service

Storm Data and Unusual Weather Phenomena



May 1998

Location	Date	Time	Path	Path	Number of	Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)		Killed	Damage Property Crops	

WISCONSIN, Southeast

During the early morning hours of Sunday, May 31st, southcentral and southeast Wisconsin experienced an unprecedented, widespread downburst wind event known as a "derecho." Incredibly powerful, hurricane-force straight-line winds, with peak gusts of 100 to 128 mph tore through 12 counties in this part of the state, while another 8 counties had peak gusts of 60 to 80 mph. Residents noted that the strongest winds only lasted a minute or two, but gusty winds hung on for 15 to 30 minutes.

Meteorologically, a solid squall line developed in southern Minnesota and gathered strength as it raced east with a translational speed of 50 to 60 mph across southcentral and southeast Wisconsin. The squall line was orientated southwest to northeast and had many microbursts and macrobursts embedded in it. Whereas all 20 counties in southcentral and southeast Wisconsin reported scattered to widespread wind damage, there were 5 main corridor, or swaths of concentrated micro/macroburst damage: 1) central Sauk county through northern Dane county through northern Jefferson county and southern Dodge county through Waukesha county and into Milwaukee county, 2) eastcentral Columbia county across northern Dodge county through southeast Fond du Lac county and through southern Sheboygan county, 3) West Bend area of central Washington county east to the Port Washington area of Ozaukee county, 4) southeast Iowa county into northwest Green county, and 5) northwest to central part of Lafayette county.

Newspaper headlines used a variety of words to describe this event: war zone, devastating, unbelievable, wicked wind, blown to bits, amazing, "Nature's Spring Cleaning," and "traveling back to the dark ages"

Utility companies and Emergency Managers stated that this was the most damaging, widespread, straight-line thunderstorm wind event to affect southern Wisconsin in the past 100 years! Estimated, monetary damage amounts for all 20 counties were \$55.852 million for residential or mobile homes, businesses, utilities buildings, agriculture buildings, signs, street lights, billboards, campers, and boats; and \$1.485 million in crop and livestock losses. As a sign of the wind power, many concrete silos had their tops blown off, and many barns flattened. Many homes and other structures had their roofs peeled off. Thousands of large trees were either uprooted or broken/twisted by the winds. Hundreds of power poles were snapped or pushed over by the winds, or falling trees/branches. At one time, about 60,000 customers were without electricity in southcentral Wisconsin, and about 170,000 in southeast Wisconsin. Some residences or businesses were without power for as much as 5 or 6 days due to deluge of utility repairs and shortage of replacement power poles. Hundreds of motor vehicles were either damaged or totaled by falling trees/branches, or collapsed garages. The monetary damages to motor vehicles is not included in the totals given above. In addition, numerous vehicle accidents resulted from inoperative stop/go street lights as roads quickly became log jams.

1. Sauk County: peak winds estimated at 100 to 120 mph. Mirror Lake Park was hard hit with lots of trees downed. North of Spring Green, a 3-year old child was killed at about 1040 am CDT on May 31st when a large tree rolled on him during a clean-up by workers. This was an indirectly-related death and is not counted officially. A total of 21 residences had minor damage, 3 major, and one was destroyed. Five businesses had minor damage, and 2 had major damage. Twenty-six farm buildings sustained minor damage, 15 major, and 11 were destroyed.

2. Marquette County: mostly tree and power line damage scattered across all parts of county. This county got off relatively easy. Measured peak wind gust of 68 mph in Briggsville. Gusts over remainder of county estimated in 60 to 70 range.

3. Columbia County: peak wind gusts estimated at 90 to 115 mph. Hardest hit areas were Lodi, Wisconsin Dells, Cambria, and Fall River to Columbus. A total of 172 residences had minor damage, and one had major damage. One business suffered minor damage, and 4 had major damage. Thirty farm buildings had minor damage, 20 major damage, and 14 were destroyed. Near Columbus, a teenager was seriously injured and hospitalised when she left a camping trailer to warn others of the strong winds.

4. Green Lake County: estimated peak winds of 60 to 65 mph along eastern border where there was some trees toppled. Otherwise scattered reports of large tree limbs knocked down across county.

5. Iowa County: estimated peak wind gusts of 100 to 115 mph in southeast corner where most serious damage occurred in a swath leading into northwestern Green county. About 20 residences or farm buildings sustained varying amounts of damage. One resident in the southeast corner stated that she had difficulty breathing and the wind sounded the like the 1984 F5 Barneveld tornado she survived.

6. Dane County: measured gust of 100 mph in Marshall, but peak gusts estimated at 110-120 mph based on damage. Hardest hit areas were Waunakee-DeForest, Sun Prairie, and Marshall. Cars were blown sideways off I-94 north of Madison. Two people injured in Marshall by flying debris as roof was torn off their home. A total of 300 residences had minor damage, 18 major, and 1 was destroyed. One business had minor damage, and 7 had major damage. Twenty farm buildings sustained minor damage, 12 major, and 15 were destroyed.

7. Lafayette County: estimated peak wind gusts of 100 mph in a swath from near Belmont to southeast of Darlington where worst damage occurred. Ten city blocks in Darlington were closed due to debris. A total of 10 residences had minor damage, 5 major, and 1 was destroyed. Two businesses sustained major damage. Fifteen farm buildings had minor damage, 5 major, and 15 were destroyed. The death of a 25 year-old man was indirectly related to the storm. He was riding an ATV vehicle on a trail around 8am CDT on June 1st in the Graitiot area when he rode into a tree that was felled earlier by the storm.



National Weather Service

Storm Data and Unusual Weather Phenomena



May 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

WISCONSIN, Southeast

8. Dodge County: was one of the hardest hit counties. Peak gust of 128 mph measured 1.5 miles northwest of Lebanon. Other gusts of 103 to 107 mph across northern part of county. Central part of county was in between the two major damage swaths in the county. Eight people were injured: 2 in home north of Beaver Dam, 2 in camper near Hartford, and 4 in a vehicle accident on Highway 41 when the winds blew over a semi-tractor truck. Near Clyman, hay wagons were blown onto the 2nd floor of damaged barns. A total of 168 residences had minor damage, and 25 had major damage. Two hundred and twenty-four farm buildings had minor damage, 111 major, and 26 were destroyed. Dozens of businesses also had varying amounts of damage.

9. Fond du Lac County: a peak gust of 83 mph was noted in Ripon, but based on damage, estimated peak gusts were in the 115-125 mph range in the southeast part of the county. Worst hit areas were Ashford to Campbellsport to Dundee and Fairwater to Brandon. A total of 188 residences had minor damage, and 20 major damage. Two businesses had major damage. Twenty farm buildings had minor damage, 10 major, and 35 were destroyed. Whiteout conditions at the height of the storm forced spotters off the road.

10. Green County: a microburst damage swath 1/2 to 1 mile wide, that started in southeast Iowa county, continued into northwestern Green county over to the New Glarus area. In the New Glarus Woods State Park, rental tents were shredded and dozens of trees toppled. Peak wind gusts were estimated in the 70 to 80 mph range. Elsewhere, on a farm near Albany, tents and tables were damaged by the winds, and 3 chopper wagons were damaged and rotated.

11. Jefferson County: area along and north of I-94 was hard hit. Estimated peak wind gusts in 110-120 mph range. Area from Lake Mills and Milford over to Johnson Creek had worst damage where several silos and other farm buildings were seriously damaged. Near Waterloo, airport hangers and a HAM radio tower were damaged. Eight people were injured by flying debris. Measured wind gust of 64 mph at Watertown airport and 61 mph at the NWS Forecast office southeast of Sullivan. A total of 2 residences had minor damage, 6 major, and 1 was destroyed. Two businesses had minor damage, and 2 had major damage. Two farm buildings had minor damage, 8 major, and 10 were destroyed.

12. Rock County: this county reported scattered areas countywide with downed trees and/or power lines. Peak gusts were estimated in the 60 to 70 mph range, especially across the northern part of the county around Edgerton.

13. Sheboygan County: estimated peak wind gusts of 110-120 mph across southern part of county, especially in the Beachwood to Adell/Waldo to Oostburg area. Northeast part of county also had many downed trees. In this county eleven residences had minor damage, and one had major damage. One Business had minor damage. Fifteen farm buildings had minor damage, and 7 had either major damage or were destroyed.

14. Washington County: all parts of county had damage, but concentrated swaths extended from the West Bend area east to Newburg, and another one across the southern tier of townships and cities. Based on damage, estimated peak wind gusts in 115-125 mph range. Had measured gusts of 105 mph in southwest corner in Town of Erin. A 48 year-old woman was crushed to death by a fallen tree while sleeping in her home in the Town of Erin at 250 am CDT. At the West Bend Airport, 6 hangers and 6 planes were destroyed and several others damaged, for a total of \$ 2 million. In the county, a total of 1636 residences had minor damage, 39 major, and 2 were destroyed. Fifty businesses had minor damage, 14 major, and 12 (all in Richfield) destroyed. Thirteen farm buildings had minor damage, 17 major, and 3 were destroyed.

15. Waukesha County: most parts of county had at least some tree or power line damage, but three areas were hit hard... the City of Waukesha through New Berlin, Stone Bank to Pewaukee, and Township of Lisbon through Minomonee Falls. A peak wind gust of 80 mph was measured at the Waukesha Airport, but peak gusts in the worst swaths of damage were estimated to reach 100 to 110 mph. Several boats and piers were damaged on some of the county's lakes. A total of 225 residences sustained minor damage and 10 had major damage. Seventeen businesses had minor damage, 18 major, and 3 were destroyed. Two agricultural buildings had minor damage, 18 major, and 3 were destroyed. In downtown Waukesha, a well-known church had it's steeple damaged by the powerful winds.

Lightning struck a home in Delafield (Waukesha Co.) after hitting a nearby gazebo and tree. A small fire resulted. Southeast of Delafield, another lightning bolt struck 2 homes and triggered small attic fires. Southeast of Pewaukee (Waukesha Co.), lightning struck a home and damaged a couple walls and a ceiling. But there was no fire.

16. Ozaukee County: all parts of the county suffered some kind of tree or structural damage, but there were 3 swaths with concentrated damage... Saukville through Port Washington, Little Kohler to Belgium, and Cedarburg to Grafton. Peak measured wind gusts were 90 mph in Port Washington, but based on damage, peak gust were estimated to be in the 100 to 110 mph range in isolated spots. The driver of a semi-trailer truck was seriously injured when he was thrown out of the cab's popped-out windshield as the truck overturned in the powerful winds. This accident occurred on I-94 between Saukville and Port Washington. For the county, a total of 600 residences had minor damage, 2 major, and 1 was destroyed. One hundred and thirty-four businesses reported minor damage, and 9 major damage. Fifty-five farm buildings had minor damage, 5 had major damage. In addition, several sail boats at Lake Michigan marinas were damaged, and a dozen milking cows were killed.



National Weather Service

Storm Data and Unusual Weather Phenomena



May 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

WISCONSIN, Southeast

17. Milwaukee County: this county had the greatest monetary value of storm damage in all of southcentral and southeast Wisconsin. All county cities had some tree or structural damage, but the hardest hit areas were Brown Deer to River Hills, Wauwatosa, and a swath through Greenfield and Greendale to South Milwaukee. Peak gusts of 103 mph was measured in Greenfield, 100 mph at the WITI TV-6 station in Brown Deer, 71 mph at the WTMJ TV-12 station on Capitol Drive, and 61 mph at Mitchell International Field. Based on damage, peak gusts were estimated at 110 -115 mph in isolated spots. At Mitchell International Field, overhead doors on some of the hangers were blown in, and a heating unit was blown off the roof of an airport Fire Department building. About 300 power poles were downed in the county, with power outages lasting 5 to 6 days in some locations. More than 2000 people were evacuated from their homes in South Milwaukee after a fallen tree branch punctured a 1-inch hole in a large propane tank. In Cudahy, stripped roof shingles were found to be embedded edge-first in nearby garage siding.

18. Walworth County: this county escaped the worst of the derecho winds. A peak gust of 61 mph (53 knots) was measured on the UW-Whitewater campus. Elsewhere, large trees were toppled in and north of East Troy and the village of Walworth. Peak wind gusts in these locations were estimated to be 70 mph.

19. Racine County: this county escaped the worst of the derecho winds. Large tree branches were knocked out of trees across the northern part of the county where peak wind gusts were estimated to be about 60 mph.

20. Kenosha County: this county escaped the worst of the derecho winds. Large trees were downed on the north side of the city of Kenosha where peak wind gusts were estimated to be about 65 mph.



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

June 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>WISCONSIN, Southeast</u>									
Washington County									
Kewaskum	12	1900CST			0	0	7K		Thunderstorm Wind
Iowa County									
3 SE Helena to 5 SW Helena	18	1100CST			0	0	9K		Thunderstorm Wind
Dane County									
Verona	18	1145CST			0	0			Hail (0.75)
Sauk County									
Lake Delton	18	1145CST			0	0	0.20K		Thunderstorm Wind
Green County									
Browntown	18	1200CST			0	0	5K		Thunderstorm Wind
Columbia County									
Portage	18	1210CST			0	0	4K		Thunderstorm Wind
Sauk County									
Baraboo	18	1226CST			0	0			Thunderstorm Wind (G53)
Green Lake County									
Green Lake	18	1230CST			0	0	1K		Thunderstorm Wind
Dane County									
Madison	18	1245CST			0	0	0.70K		Lightning
Marquette County									
Oxford	18	1250CST			0	0	2K		Thunderstorm Wind
Rock County									
Clinton to 2.5 NE Clinton	18	1515CST			0	0	57K		Thunderstorm Wind
Rock County									
Edgerton	18	1530CST			0	0	11K		Thunderstorm Wind
Walworth County									
1.5 N Darien	18	1530CST			0	0	2K		Thunderstorm Wind
Walworth County									
2.5 N Elkhorn	18	1600CST			0	0	3K		Thunderstorm Wind
Sauk County									
Reedsburg	18	1605CST			0	0	1K		Thunderstorm Wind
Iowa County									
3 SW Helena	18	1630CST			0	0	950K		Thunderstorm Wind
Lafayette County									
1 N Benton	18	1630CST			0	0	1K		Thunderstorm Wind
Waukesha County									
Nashotah	18	1630CST			0	0	5K		Lightning
Iowa County									
1 E Montfort Jct to Cobb	18	1635CST 1640CST			0	0	3K		Thunderstorm Wind
Iowa County									
.5 E Montfort Jct	18	1640CST			0	0	4K		Thunderstorm Wind
Iowa County									
Clyde to 5 SE Clyde	18	1655CST 1700CST			0	0	7K		Thunderstorm Wind
Sauk County									
La Valle to 3 S Reedsburg	18	1658CST 1705CST			0	0	40K		Thunderstorm Wind (G56)



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
<u>WISCONSIN, Southeast</u>									
Rock County Janesville	18	1700CST			0	0	19K		Thunderstorm Wind (G52)
Dane County Middleton to Fitchburg	18	1715CST 1720CST			0	0	200K		Thunderstorm Wind
Lafayette County Elk Grove	18	1730CST			0	0			Urban/Sml Stream Fld
Jefferson County Jefferson to Ft Atkinson	18	1750CST			0	0	6K		Thunderstorm Wind
Washington County West Bend	18	1802CST			0	0			Thunderstorm Wind (G52)
Waukesha County 3.5 W Dousman to Waukesha	18	1825CST 1855CST			0	0	30K		Thunderstorm Wind
Walworth County Countywide	18	1830CST 1900CST			0	0	27K		Thunderstorm Wind
Rock County Footville	18	1835CST			0	0	5K		Thunderstorm Wind
Rock County Janesville	18	1857CST			0	5			Lightning
Milwaukee County Milwaukee	18	1900CST			0	0			Thunderstorm Wind (G55)
Washington County Slinger	18	1900CST			0	0			Thunderstorm Wind (G52)
Kenosha County Trevor	18	1915CST			0	0	2K		Thunderstorm Wind
Milwaukee County Fox Pt	18	1915CST			0	0	3K		Lightning
Sheboygan County Sheboygan	18	1930CST			0	0			Thunderstorm Wind (G52)
Sheboygan County Sheboygan	18	1959CST			0	0	1K		Thunderstorm Wind

Scattered thunderstorms developing around the noon hour became more numerous and intensified to severe levels over southern Wisconsin by evening. Hardest hit was Rock County where two gustnadoes roared through the Clinton area producing winds estimated at 70 to 80 mph, toppling trees and power lines, and causing damage to 15 homes. Residents of Beloit and Janesville, also in Rock County, were left without electricity overnight due to widespread tree and power line damage from thunderstorm winds. Elsewhere, scattered tree and power line damage was reported with numerous wind gusts between 60 and 70 mph raking southcentral and southeast Wisconsin. A great financial and historical loss was suffered at Taliesin (Iowa Co.) where a 220 year old oak tree crashed into the studio wing of the architectural landmark. So many trees were toppled in Tower Hill State park near Taliesin that the park was closed to the public for several days. Lightning and torrential rains played havoc in isolated areas with a home fire reported in Nashotah of Waukesha county and 5 people incurring temporary electrical shock in Janesville of Rock county. A few rainfall totals included 2.6 inches near Cuba city in Lafayette county and 2.67 inches measured at the Madison's Dane County Regional Airport. At one point 4 inches of standing water was reported in the streets of Madison that evening



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

June 1998									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>WISCONSIN, Southeast</u>									
Sauk County 3 S Reedsburg	20	1815CST			0	0			Thunderstorm Wind (G55)
Sauk County Baraboo	20	1900CST			0	0	1K		Thunderstorm Wind
Dane County De Forest	20	1928CST			0	0			Hail (1.00)
Waukesha County Waukesha	24	0500CST			0	0	6K		Lightning
		Lightning ignited a fire in the attic of a home.							
WIZ066		Milwaukee							
	25	0600CST 2200CST			0	21			Excessive Heat
		High levels of heat and humidity over Milwaukee County, amplified by the "urban heat-island" effect, resulted in 21 people being treated at area hospitals for heat-related injuries/exhaustion. The Mitchell International Airport morning low was 72 and the daytime maximum was 95, while minimum relative humidities were only 40 to 45 percent, yielding heat index values of 100 to 104. Dewpoints were around 70 degrees.							
Iowa County Clyde	25	1545CST			0	0	2K		Thunderstorm Wind
Iowa County Ridgeway	25	1800CST			0	0	2.5K		Thunderstorm Wind
Rock County 2.3 WNW Leyden to 1 NNE Leyden	25	1805CST 1820CST	2.5	100	0	0	845K	3K	Tornado (F2)
Green County 3 NE Albany	25	1810CST			0	0			Funnel Cloud
Green County 2 NW Brodhead	25	1815CST			0	0		0.50K	Hail (1.00)
Rock County Janesville to Milton	25	1818CST 1820CST			0	0		1K	Hail (1.00)
Rock County Janesville	25	1848CST			0	0		3K	Hail (2.00)
Jefferson County Palmyra	25	1900CST			0	0	2K		Thunderstorm Wind
Rock County Janesville to Emerald Grove	25	1925CST 1930CST			0	0	4K		Thunderstorm Wind (G56)
Walworth County 3 W Elkhorn	25	1944CST			0	0			Thunderstorm Wind (G60)
Green County Juda	25	1945CST			0	0	5K		Thunderstorm Wind
Walworth County Lake Geneva	25	1950CST			0	0	3K		Thunderstorm Wind
Kenosha County Kenosha Muni Arpt	25	2005CST			0	0			Thunderstorm Wind (G50)
Kenosha County Silver Lake to Paddock Lake	25	2005CST 2010CST			0	0	50K		Thunderstorm Wind



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

Racine County

Burlington to Kansasville	25	2010CST 2020CST			0 0	75K	Thunderstorm Wind
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Kenosha County

Bristol to Kenosha	25	2025CST 2030CST			0 0	200K	Thunderstorm Wind
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Racine County

2 N Racine	25	2030CST			0 0	3K	Lightning
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Severe thunderstorms packing winds between 60 and 70 mph and producing hail between 1 and 2 inches in diameter caused significant damage to property and crops. Kenosha and Racine counties experienced some of the worst destruction with 40,000 homes and businesses left without power due to the high number of trees and power lines downed. In the city of Racine a tree fell on a home and another tree crushed an automobile. In Kenosha county, siding was ripped off the side of a Bristol business and metal signs were blown down on Interstate 94. Hidden among the thunderstorms was a lone F2 tornado that took aim on northern Rock county, destroying 3 homes and damaging 4 others. A barn and 2 sheds were also destroyed. Three garages and 3 cars were damaged and a 20 foot beam was found anchored in the ground at a 45-degree angle in the storms aftermath. Fortunately there were no deaths or injuries. This tornado touched down just southwest of a railroad track 2.3 miles west/northwest of Leyden and lifted just east of Highway 184, 1 mile north/northeast of Leyden. Eyewitness reports suggest that this slow moving tornado had a second vortex at one time, and at another time it was nearly stationary for a couple minutes. The slow movement enhanced the destruction. At least 3 individuals video-taped it. Maximum winds were estimated to be about 150 mph.

Walworth County

Sharon	26	0200CST 0800CST			0 0		Urban/Sml Stream Fld
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The Little Sharon Creek overflowed due to heavy a rainfall of 3.5 inches in it's watershed overnight and flooded nearby Highway 67 with 1 foot standing water.

Marquette County

Oxford	27	0118CST			0 0		Thunderstorm Wind (G52)
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Marquette County

2.5 SW Westfield	27	0130CST 0230CST			0 0		Urban/Sml Stream Fld
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Sauk County

Baraboo	27	0155CST			0 0	3K	Thunderstorm Wind
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Green Lake County

Green Lake	27	0201CST			0 0	3K	Thunderstorm Wind
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Columbia County

Portage	27	0220CST			0 0	2K	Thunderstorm Wind
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Fond Du Lac County

2 N Eldorado	27	0230CST			0 0	5K	Thunderstorm Wind
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Dane County

Madison	27	0302CST			0 0	3K	Thunderstorm Wind (G60)
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Washington County

West Bend	27	0307CST			0 0	5K	Thunderstorm Wind
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Rock County

Evansville	27	0415CST			0 0	3K	Thunderstorm Wind
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Early morning thunderstorms, some of them severe, rolled east across southcentral and southeast Wisconsin. Straight-line downburst winds of 60 to 70 mph associated with the severe storms pushed over large trees and toppled some power lines. Heavy rains of 1.08 inches in 28 minutes ending at 0142CST resulted in urban /small stream flooding southwest of Westfield in Marquette County. The



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

powerful winds, blinding rain, and high waters forced a rescue of 61 campers on a Wisconsin River sandbar east of Portage on the Sauk County side of the river. In West Bend (Washington Co.), about 1500 customers lost electricity due to toppled powerlines.

Sauk County Baraboo	27	2036CST			0 0	2K	Thunderstorm Wind (G50)
Sauk County La Valle	27	2041CST			0 0	0.10K	Thunderstorm Wind (G51)
Sauk County Loganville	27	2126CST			0 0	3K	Thunderstorm Wind (G56)
Columbia County Poynette	27	2130CST			0 0	4K	Thunderstorm Wind
Marquette County Montello	27	2130CST			0 0	5K	Thunderstorm Wind
Dane County 1 E De Forest	27	2150CST			0 0	2K	Thunderstorm Wind
Green Lake County Berlin to Green Lake	27	2200CST 2215CST			0 0	6K	Thunderstorm Wind
Iowa County Dodgeville	27	2200CST			0 0	3K	Thunderstorm Wind
Dane County Belleville	27	2210CST			0 0	3K	Thunderstorm Wind (G56)
Rock County 2 E Janesville	27	2315CST			0 0	1.5K	Thunderstorm Wind
Walworth County Elkhorn to Lake Geneva	27	2335CST 2345CST			0 0	4K	Thunderstorm Wind (G52)
Waukesha County Elm Grove	28	0000CST			0 0	10K	Lightning
Milwaukee County St Francis	28	0030CST			0 0	20K	Lightning
Lafayette County Belmont	28	0045CST			0 0	2K	Thunderstorm Wind
Lafayette County Lamont	28	0100CST 0115CST			0 0	3K	Thunderstorm Wind
Dane County Belleville	28	0130CST			0 0	2K	Thunderstorm Wind
Green County Monroe	28	0145CST			0 0	20K	Thunderstorm Wind
Dane County 2 E Cottage Grove	28	0150CST			0 0	1K	Lightning
Dane County Albion	28	0415CST			0 0	100K	Lightning

Additional rounds of severe thunderstorms possessing damaging straight-line winds of 60 to 65 mph struck southcentral and southeast Wisconsin for the second time on the same day. In this episode, the severe storms extended into the early morning hours of the next day. The bulk of the damage consisted of numerous large trees pushed over by the powerful winds. Some powerlines were also toppled. In Sauk County, the winds pushed in a window of a home in La Valle. About 600 homes lost electricity due to downed powerlines. In Dane County, a Belleville home suffered damage to its soffits. In Green County, a fallen tree in Monroe crushed a pickup truck and also damaged a car. A golf country club near Monroe was closed for 6 hours on the 28th in order for work crews to clean up tree debris. In Dane County, lightning struck a home east of Cottage Grove and left some smoke damage, but there was no fire. Another lightning strike in Albion (Dane Co.) started a fire that burnt a pole shed to the ground. The fire



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

destroyed a mobile home, 2 field tractors, a garden tractor, and tools that were in the shed. In Waukesha County, lightning struck the Elm Grove Village Hall, knocking out its 911 system and damaging office PC's. There was no fire. In Milwaukee County, lightning struck a St Francis home, resulting in an attic fire and water damage.

Lafayette County Shullsburg

29	1515CST	0	0	4K	Lightning
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Rock County Orfordville

29	1630CST	0	0	15K	Lightning
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Scattered late afternoon thunderstorms over southcentral Wisconsin generated lightning strikes that resulted in damage. In Lafayette County, lightning struck a Shullsburg church steeple's lightning rod and jumped to a nearby telephone pole. The church steeple was scorched, but there was no fire. The telephone pole was shattered and then 2 TV sets in nearby homes were damaged. In Orfordville, lightning struck a fuse box on a pole, reducing voltage to 4 nearby businesses and one home. A couple phone lines, home PC's, and a satellite dish were damaged.



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1998

July 1998								
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops	Character of Storm
<u>WISCONSIN, Southeast</u>								
Iowa County Mifflan	03	1448CST			0	0	2K	Thunderstorm Wind
Green County 4 NE Monroe	03	1602CST			0	0	2K	Thunderstorm Wind
Scattered thunderstorms, some of them severe, affected southcentral Wisconsin during the late afternoon hours. In two cases, powerful downburst winds toppled large trees and down power lines in Iowa and Green county.								
WIZ052	Sheboygan							
	14	1100CST 2200CST			0	3		Excessive Heat
Three people in the city of Sheboygan were treated in local hospitals for heat exhaustion due to high temperatures around 90 after morning lows around 70 degrees and afternoon dewpoints in the 70s creating oppressive heat conditions.								
Sauk County Baraboo	19	0123CST			0	0	3K	Lightning
Iowa County 1 E Livingston	19	0150CST			0	0	100K 100K	Thunderstorm Wind
Iowa County Dodgeville	19	0203CST			0	0	10K	Thunderstorm Wind
Lafayette County Darlington to 3 ENE Fayette	19	0205CST 0220CST			0	0	20K	Thunderstorm Wind
Dane County 5 N Mt Horeb	19	0210CST			0	0	2K	Thunderstorm Wind
Green County New Glarus	19	0230CST			0	0	2K	Thunderstorm Wind
Rock County Evansville	19	0250CST			0	0	3K	Thunderstorm Wind
Rock County Beloit	19	0305CST			0	0	7K	Thunderstorm Wind
WIZ072	Kenosha							
	19	1100CST 2300CST			0	10		Excessive Heat
A warm front spawned severe thunderstorms in the early morning across southcentral and southeast Wisconsin, resulting in downburst winds which toppled numerous trees and power lines. In addition, a sawmill was destroyed near Livingston in Iowa county and a camper was damaged by felled trees in Yellowstone State Park in Lafayette county. In Sauk county lightning struck a Baraboo home and started a house fire. Later that afternoon in the sweltering heat, 10 people suffered heat exhaustion at the Country Thunder musical festival near Twin Lakes (Kensoha Co.), and were treated at a local hospital. Afternoon temperatures in the lower 90s , dewpoints in the lower 70s and full sunshine were the afternoon weather conditions. exhaustion.								
Racine County Union Grove	20	1552CST			0	0	2K	Lightning
Dodge County Randolph	20	1615CST 1730CST			0	0		Urban/Sml Stream Fld
Sauk County Plain	20	1640CST			0	0	2K	Thunderstorm Wind



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>WISCONSIN, Southeast</u>									
Jefferson County Waterloo	20	1707CST			0	0	1K		Thunderstorm Wind
Lafayette County 5 N Argyle	20	1710CST			0	0	2K		Thunderstorm Wind
Sauk County 3 W Lake Delton to Lake Delton	20	1710CST			0	0	2K		Thunderstorm Wind
Columbia County Poynette	20	1715CST			0	0	3K		Thunderstorm Wind
Lafayette County South Wayne	20	1715CST			0	0	4K		Thunderstorm Wind
Washington County West Bend	20	1715CST			0	0	262K		Lightning
Green County Monroe	20	1720CST			0	0	50K		Thunderstorm Wind
Jefferson County Johnson Creek	20	1720CST			0	0			Hail (0.75)
Dane County Oregon	20	1723CST			0	0			Hail (1.00)
Dane County Belleville	20	1750CST			0	0	2K		Thunderstorm Wind
Waukesha County Delafield to 2 E Waukesha	20	1750CST 1759CST			0	0	6K		Tstm Wind/Hail
Jefferson County Ixonia	20	1753CST			0	0	5K		Thunderstorm Wind
Rock County Clinton	20	1755CST			0	0			Thunderstorm Wind (G63)
Rock County Janesville	20	1756CST			0	0	50K		Lightning
Rock County Janesville to Milton	20	1758CST			0	0	100K		Thunderstorm Wind (G60)
Rock County Janesville	20	1800CST 1900CST			0	0			Urban/Sml Stream Fld
Waukesha County Oconomowoc	20	1800CST			0	0	4K		Lightning
Walworth County Delavan	20	1803CST			0	0	2K		Thunderstorm Wind (G52)
Milwaukee County Milwaukee	20	1810CST			0	1	1K		Thunderstorm Wind
Walworth County Lake Geneva	20	1815CST			0	2	1.5M		Thunderstorm Wind (G87)
Racine County Burlington	20	1820CST			0	0	3K		Thunderstorm Wind
Dane County Deerfield	20	1843CST			0	0	1K		Lightning



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

Kenosha County									
Silver Lake	20	1845CST			0	0	5K		Thunderstorm Wind
Fond Du Lac County									
Ripon to 1 N Waupun	20	2205CST			0	0	10K		Thunderstorm Wind
Dodge County									
Theresa	20	2247CST			0	0	2K		Thunderstorm Wind (G54)
Washington County									
Slinger	20	2302CST 2310CST			0	0	10K		Thunderstorm Wind (G52)
Ozaukee County									
3 SW Port Washington	20	2340CST			0	0			Hail (0.75)
Ozaukee County									
Grafton	20	2345CST			0	0	10K		Lightning
Ozaukee County									
2.5 SW Port Washington	20	2351CST			0	0	8K		Lightning

Frontal induced severe thunderstorms downed trees and power lines over much of south-central and southeast Wisconsin during the evening hours. Hardest hit was the Lake Geneva (Walworth Co.) area where downburst winds leveled hundreds of large trees, several street signs, and a large quantity of commercial signs. A dozen vehicles were damaged or totaled and 2 homes sustained significant damage. A 100 mph wind was recorded at the Grand Geneva Airport and 2 people were injured (one in a moving vehicle). Local officials consider this to be the worst storm in 58 years. In Monroe (Green Co.), the powerful thunderstorm winds also damaged 6 vehicles and 2 homes. Elsewhere, hail, high winds, lightning, and torrential rains played havoc. In West Bend (Washington Co.), lightning ignited a fire in an apartment complex and caused a quarter of a million dollars in damage. Urban flooding in Janesville (Rock Co.) resulted in standing water between a foot to a foot and a half deep across area roadways. Wind damage was the most common culprit though with over 200 power lines downed and 17,000 customers without service in southeast Wisconsin and 10,000 residents left without power across south-central Wisconsin.

Walworth County									
Elkhorn to 4 E Spring Prairie	21	1210CST 1225CST			0	12	1.9M	105K	Thunderstorm Wind (G87)
Rock County									
Beloit	21	1220CST			0	0	10K		Thunderstorm Wind
Walworth County									
Sharon to Walworth	21	1220CST 1230CST			0	0	5K		Thunderstorm Wind
Racine County									
Burlington to 5 SW Racine	21	1230CST 1315CST			0	1	250K		Thunderstorm Wind (G87)
Kenosha County									
Countywide	21	1235CST 1315CST			0	0	200K	200K	Thunderstorm Wind (G87)

Scattered thunderstorms developed in an unstable atmosphere over southcentral Wisconsin in the early afternoon hours. These storms quickly became severe and merged over Walworth County. Hurricane-force winds were generated over the north side of Elkhorn (Walworth Co.); and the resultant wind damage strongly suggests that winds gusts peaked in the 100 to 110 mph range. Officials in Elkhorn declared a state of emergency and asked for extra help with the cleanup, thanks to hundreds of downed trees and many power lines. Several Elkhorn downtown office buildings suffered some minor damage, while 6 buildings on the north side along Highway 67 had considerable damage (3-minor, 1 major, and 1 destroyed). Thirteen people were injured and 14 vehicles sustained damage. This wicked dowburst then traveled through rural farmland east to the Walworth county line, destroying 3 farm buildings in the process. Altogether, about 27,000 customers in Walworth County lost electrical power. Further east, this wet macroburst became wider and left a path of damage or destruction about 6 to 8 miles wide across northern Kenosha County and southern Racine County. In the Burlington area (Racine Co.), 300 trees were downed and many powerline or poles, leaving 15,000



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

WISCONSIN, Southeast

customers were left without power. A plane tied down at the Burlington airport was tossed over, and rowboats on a local lake were damaged. Elsewhere in southern Racine County, traffic lights were damaged, the Great Lakes Dragway was closed, and the YMCA toboggan slide was destroyed. In Kenosha county 7 semi-trailer tractors were blown over on Interstate-94 west of Somers (Kenosha Co.)! The downburst swath in northern Kenosha County also damaged several corn fields, downed hundreds of trees, leveled a barn near Somers, and damaged several homes. One account was that the town of Somers looked like a bomb exploded ater the storms passed through.



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

Columbia County

Arlington to
Lodi

04 0700CST 1200CST 0 0 20K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through southern Columbia Co. and dumped 5 to 7 inches of rain between 0500CST and 1000CST. The resultant flash flooding led to shoulder gravel washouts on several roads, basement flooding (especially in Lodi), storm sewer backups, quick flooding of area rivers and streams, and some damage to a city park

The large-scale atmospheric setup for this flash flood consisted of a cutoff upper level low pressure over the Northern Plains and the associated surface low over Iowa. From the surface low pressure a frontal boundary extended northeast through Wisconsin. This combination pulled deep tropical moisture (surface dewpoints in the 70s) into Wisconsin. The frontal boundary served as a focus for thunderstorm development. Through August 6th, the upper level low pressure meandered southeast into Iowa while the surface low pressure moved to the Wisconsin-Illinois border, along a southwest-northeast orientated surface trough of low pressure.

Rock County

Beloit

05 0200CST 0800CST 0 0 Urban/Sml Stream Fld

A series of thunderstorms moving slowly northeast at 10 mph trained over the Beloit area during the early morning hours. Minor urban flooding of streets to a depth of 6 inches to around 1 foot and some minor basement flooding were the main reports. An estimated 3 to 4 inches of rain fell from about 0100CST to 0800CST, but north of Beloit, 5.6 inches of rain fell at the Rock County Airport. The resultant airport runway flooding was the 1st occurrence on record!

Waukesha County

Big Bend to
2 S Big Bend

05 0700CST 1000CST 0 0 40K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Big Bend area of southeast Waukesha Co., dumping 4 to 6 inches of rain between 0400CST and 0900CST in Big Bend. A portion of Highway 164 was washed away by the flood waters, while a couple other roads had shoulder gravel washouts. A woman was rescued from her stalled car in 4 foot deep waters. Likewise, an elderly man was rescued from his stalled car. Just south of the village of Big Bend, a drainage ditch and feeder creek into the Fox River flooded and washed away a pedestrian bridge at the Fox River Inn on Highway 164. There was also significant soil erosion at that location. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Racine County

Waterford to
4 N Waterford

05 0700CST 1100CST 0 0 200K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through western Racine Co., dumping 4 to 6 inches of rain between 0400CST and 0835CST in Waterford. Water levels in some farm fields reached an unbelievable 5 to 6 feet. Highway 164 north of Waterford was closed due to "rivers" of water 1 to 3 feet deep surging across the road surface. Shoulder gravel washouts were noted on Highway 164 and several other rural roads. A total of 10 homes were damaged. One home in Waterford sustained severe damage when its basement wall collapsed due to water pressure. A couple retaining walls in a Waterford subdivision were pushed over by the flood waters. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

Rock County

Janesville

05 0750CST 1030CST 0 0 550K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through Rock Co., dumping 3 to 4 inches of rain within a couple hours. The resultant flash flood left damage to about 50 homes in Janesville, washed out gravel road shoulders, and stalled or floated many vehicles. Water levels on many roads reached a depth of 1 to 3 feet, and forced the closure of the I-94 exit ramp at Highway 14. Some homes had basement wall damage, while many streets were closed until water levels receded. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Walworth County

Whitewater

05 0900CST 1300CST 0 0 100K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Whitewater area... dumping 4 to 8 inches of rain between 0630CST and 1100CST. The resultant flash flooding closed some city roads due to water levels of 1 to 3 feet. Several stalled cars were reported. Water poured into the lower level of two UW-Whitewater buildings. In one of the buildings, water depths reach 4 feet, resulting in damage to the A/C system and electrical system. The loss of power resulted in the loss of a police radio frequency, since the radio equipment is housed in this building. Two homes suffered contents damage, while 1 business reported substantial damage. On the south side of the city, surging waters in a drainage ditch eroded the southwest embankment of the intersection of Highways 59 and 89. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Milwaukee County

Milwaukee

05 1000CST 1300CST 0 0 20K Urban/Sml Stream Fld

A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Milwaukee area... dumping 2 to 4 inches of rain between 0900CST and 1300CST. The resultant urban flooding closed some roads, notably College Ave. from 27th to 31st street. Water depths on some city streets reached 1 to 2 feet. The Public Safety Building in downtown Milwaukee had a flooded basement. A tunnel at Mitchell International Airport had water levels of 4 feet, and the terminal also had some minor flooding in a baggage room. Water covered the passing lane on I-94 near the KK River. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Green County

Juda

05 1500CST 0 0 Funnel Cloud

Rock County

Janesville to Milton

05 1515CST 1800CST 0 1 1.5M 150K Flash Flood

A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Janesville to Milton area. This round of an additional 1 to 4 inches brought the day's total to 6 to 10 inches based on WSR-88D Doppler radars. The resultant flash flooding damaged the basement contents in about 70 homes, washed out some gravel shoulders on roads, and peeled back the pavement on a couple roads. Water levels on some area streets reached 3 to 4 feet. A 13-year old boy was injured in Janesville's Palmer Park after being swept into a culvert. He was under water for about 9 minutes. One Janesville home was destroyed when its basement wall collapsed. The surging waters busted out windows in several other homes. Another Janesville home was destroyed when one sidewall crumbled from the force of waist-high water. The Janesville Elks Club's parking lot sustained pavement damage. Nearby farm fields had water depths of 2 to 5 feet in low spots, with resultant damage to the corn crop. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

Walworth County

1 W Williams Bay	05	1840CST 1841CST			0	0			Funnel Cloud
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Rock County

Clinton to 4 E Clinton	05	1945CST 2200CST			0	2	250K		Flash Flood
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Clinton area, dumping an additional 4 to almost 6 inches. The day's rainfall total reached 8 inches based on WSR-88D Doppler radars. The resultant flash flooding washed out two bridges on roads north and northeast of Clinton. Two miles north of Clinton, at about 2010CST, a 12 foot long bridge on Highway 140 over Turtle Creek was washed away by surging waters. A few minutes later, with the bridge missing and visibilities poor, a vehicle was driven into Turtle Creek. It's two occupants were rescued by the local fire department. At 1020 pm, a couple miles east and upstream on Turtle Creek, a bridge on the Bradford-Clinton Townline Road was washed out by the flood waters. A vehicle was traveling on this bridge when it collapsed. The car and its two occupants were swept downstream about 100 yards. The injured occupants, after hanging on to tree branches for 1 hour, were rescued by the local fire department. In Clinton, several homes and businesses sustained flooding damage to their contents. East of Clinton on County X, several cars and trucks were swept off the road by the flood waters.

The village of Clinton registered 5.79 inches of rain between 1900CST and 2200CST. Turtle Creek in Clinton was above flood stage from 1115am on August 5th to 7pm on the 6th. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Walworth County

Delavan	05	2000CST 2300CST			0	0			Urban/Sml Stream Fld
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Delavan area, dumping 2 to 4 inches of rain. The resultant urban flooding generated water depths of 1 to 2.5 feet on some city streets. Some roads were closed, and several vehicles stalled. Just north of Delavan, Turtle Creek, which runs into Lake Comus, was reported to be 2 feet over flood stage. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Walworth County

6 SE Whitewater to Tibbet	05	2030CST 2300CST			0	0	30K		Flash Flood
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the area southeast of Whitewater to northwest of Elkhorn, dumping an additional 1 to 3 inches of rain on top of an earlier 3 to 5 inches. The resultant flash flooding waters washed out gravel shoulders on several roads, and stalled several vehicles. Water levels in some of the low spots on roads reached 2 to 4 feet. Northeast of Tibbets, near lake Wandawega, a women was rescued from her vehicle by the local fire department. Twenty homes suffered contents damage in basement flooding. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

Sheboygan County

Sheboygan	06	0540CST 1300CST			0	0	40M	50K	Flash Flood
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A devastating, record flash flood hit the area from Sheboygan Falls to the city of Sheboygan during the early morning hours, with Sheboygan having the worst of the flooding. An incredible 10.75 inches of rain fell at the Sheboygan Press building, and unofficial reports indicate that around 12 inches may have fallen in parts of the city. The rain started about 0100CST, and continued until about 0800CST as a series of thunderstorms, moving slowly northeast at 10 mph, trained through the same areas. Rainfall amounts diminished going west through the county... 5 inches fell in Plymouth. A "state of emergency" was declared by the Governor

At least 3 bridges in Sheboygan were severely damaged and immediately closed to traffic. Several other roads had chunks of



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

pavement torn loose, or curbs washed away. The monetary damage to the road and bridge infrastructure amounted to almost 6 million dollars! About 400 residential homes sustained minor damage, about 500 suffered major damage, and 6 were destroyed. Consequently, over 500 of these structures were left uninhabitable due to collapsed basement walls, shifting of foundations, etc. One elderly man was trapped in his home, but was rescued at the last second as his entire home disintegrated. Six businesses sustained minor damage, and 4 suffered major damage. Several downtown buildings had walls crumble due to the force of flood waters. Some city hillsides also collapsed. One man lost two vehicles, a camper, and basement and 1st floor personal property to the raging water currents. The City School District suffered substantial damage (\$1.2 million), especially to North High School. The Red Cross set up shelter for those who needed it, but also lost some of its emergency supplies due to a flooded basement. Two large apartment complexes had to have most of their residents evacuated due to water depths of 4 to 7 feet in the 1st floor rooms! One woman was rescued while floating on a mattress in water only 1 foot from the ceiling. Only minor crop damage was reported.

Many area and city roads were closed, and in some spots the water depth reached 5 to 6 feet! County Highway EE south of State 28 washed out, while I-43 west of the city of Sheboygan was reduced to one lane travel both ways. State 23 was closed at I-43 for a couple hours. Area golf courses were hit hard with many soil/tree washouts reported.

Many creeks throughout the eastern part of the county were described as "raging currents." Fisherman Creek in the city of Sheboygan was responsible for 1 bridge washout. The city's infrastructure suffered about \$2.5 million in damage. The Sheboygan River in Sheboygan set a new record crest of 12.02 feet at 1700CST (6pm), or 4.02 feet above flood stage. It remained above flood stage at this location from 0745CST on August 6th through 1400CST on the 7th. The max discharge was 7820 cfs, or between a 25 and 50 year flood.

Some quotes from newspapers: "The Great Flood of 1998", "It Just Never Stopped", "And the Rains Came", "Sheboygan Submerged", "We Were so Scared We Didn't Know What to do", "The Deluge of 98", and "Sheboygan Under Siege". The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Washington and Ozaukee Co. were persistent atmospheric breeding areas for all the thunderstorms that affected Sheboygan Co.

Sheboygan County Sheboygan

06	0630CST	0	0	25K	Lightning
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Lighting struck a cemetery building, and ignited a fire that damaged the building.

Milwaukee County Wauwatosa to Brown Deer

06	1430CST	0	1	22.1M	Flash Flood
07	0100CST				

Waukesha County Brookfield to New Berlin

06	1430CST	2	1	17.3M	Flash Flood
07	0100CST				

M100U, M140U

A monumental flash flood event ravaged adjacent portions of Milwaukee and Waukesha counties during the afternoon and evening hours. For the northwest quarter of Milwaukee Co., and the northeast/ eastcentral parts of Waukesha Co., it was the second year in row (press headline - "deja vu all over again"). In Milwaukee Co., the damage wasn't as bad as that in June 1997, but for Waukesha Co. it was the worst flooding ever. Here are the details broken down by county:

1) Milwaukee County...

The flash flood was the result of 5 to almost 9 inches of rain, between 1330CST (230pm) and 2000CST (9pm), falling on top of 1 to 3 inches that fell the previous two days. Maximum storm rainfall was 8.90 inches in Milwaukee on north 78th Street. A location in northern Wauwatosa came in with 8.40 inches between 2 pm and 9pm, while at 76th and Silver Springs in northwest Milwaukee, 7.12 inches were measured.

The flash flooding quickly exhausted the local resources available in the city of Brown Deer, while the Red Cross opened shelters. One-hundred and twenty people in Milwaukee Co. became homeless due to home damage, while another 215 were evacuated. All together, 3517 residential structures sustained damage in the county: 3308 minor, 206 major damage, and 3 destroyed. Five businesses reported minor damage, and 18 major damage. Two private/utility structures had minor damage, and 7 had major damage. These three categories collectively had damage amounts of \$20.05 million. There was an additional \$2.092 million in damage to the public sector such as road systems, buildings, water control, etc. About 6500 residential and 50 business places lost power due to various outages.

One 13 year-old boy was injured as he was swept by flood waters into a culvert and submerged for 15 minutes. Many roads were flooded and closed with water levels reaching 3 to 5 feet. Boats were needed to rescue several people. Highway 45 was closed, while Timmerman Field had minor flooding. A retaining wall in northwest Milwaukee collapsed due to high water levels. The city of Wauwatosa has decided to purchase some of the homes in the Menomonie River flood plain, and the city of Brown Deer will purchase some homes in the South Branch Creek flood plain to mitigate future damage.



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

The Menomomie River in Wauwatosa crested at a record 18.3 feet on August 6th at 2026CST (826pm), about a foot higher than that observed a year ago. It was above flood stage from 1600CST (500pm) on the 6th to 840CST (940 am) on August 7th. The discharge at this location was 12800 cfs, or between a 50 and 100 year flood. Water levels were so high in Wauwatosa that an Amtrack train was halted with 350 passengers on board. Underwood Creek in Wauwatosa crested at a record 13.10 feet, or 2.10 feet above flood stage. It was above flood stage from 1655CST (555pm) on August 6th to 1930CST (830 pm) on the 6th.

The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Walworth and western Racine Co. were persistent atmospheric breeding areas for all the thunderstorms that moved northeast over Milwaukee Co. Interestingly, the atmosphere recovered it's flash-flood potential during the late morning hours (after the Sheboygan County flash flood early on August 6th) as a southwest- northeast orientated surface front sagged south from Washington and Ozaukee counties to Walworth and Racine Counties by early afternoon.

2) Waukesha County...

The worst flash flooding of the 1900's struck eastern Waukesha Co. , resulting in large monetary loses, and forcing some residents to decide to move out of flood plains. The worst flash flooding occurred from Brookfield through Elm Grove into New Berlin, and was the result of 6 to almost 12 inches of rain between 1230CST (130pm) and 2000CST (9pm), falling on top of 1 to 2 inches that fell in the previous two days. Maximum storm rainfall was 11.75 inches in Elm Grove at the intersection of North and Calhoun. There was an 11.50 inch report out of Brookfield, while the Brookfield High School registered 8.75 inches.

Tragically, 2 teenage boys, ages 10 and 14, died when swirling flood waters swept them into a drainage ditch at 1710CST (610pm) which flowed into Underwood Creek in Elm Grove at Watertown Plank and Sunnyslope Roads. Rescue workers had to put on scuba diving gear to locate one of the boys. Flood waters of 4 to 5 feet covered much of New Berlin, half of Brookfields roads were submerged, and water to a depth of 4 to 7 feet settled in over Elm Grove. In fact, The Mill Place Shopping Center in Elm Grove still had standing water on August 7th. Flooding was so bad at the I-94 and Moreland Rd. interchange that local officials closed that intersection. Rescue workers in boats had to pluck people out of their stalled vehicles in that area. Compounding the flooding problem was the accumulation of raw sewage which backed into many basements.

Overall, 2680 residential homes sustained minor flood damage, while 10 had major damage. Thirty businesses suffered minor damage, 20 had major damage, and 2 were destroyed. One utility building sustained minor damage. There was nearly a half-million dollars in damage in the public sector to road systems, buildings, etc.

Many roads suffered gravel washouts on the shoulders, while a portion of Blackwolf Run golf course washed away. Many streams and creeks had high water levels for days after the bulk of the flash flood. The Fox River in Pewaukee crested at 12.08 feet at 0100CST (2am) on August 8th, or 2.08 feet over flood stage, and would stay above flood stage through the 10th. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Walworth and western Racine Co. were persistent atmospheric breeding areas for all the thunderstorms that affected eastern Waukesha Co.

Green County 1 N New Glarus

14	1739CST	0	0	Hail (1.75)
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Green County 2 E Albany

14	1800CST	0	0	Hail (1.00)
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A west-east line of thunderstorms dropped southeast across southcentral Wisconsin, and a couple cells on the west flank briefly pulsed to severe weather limits. Large hail were the only reports.

Jefferson County 2 W Watertown

21	1423CST	0	0	Funnel Cloud
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Dodge County 2 NE Theresa

22	1736CST	0	0	1K	Thunderstorm Wind (G59)
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Washington County 3 W Wayne

22	1751CST	0	0	1K	Thunderstorm Wind
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A short line of thunderstorms moved east through northern Washington Co. and briefly pulsed to above severe limits. Powerful downburst winds toppled several large trees in northeastern Dodge Co. (gust to 68 mph), and then moved into northwestern Washington Co.

Jefferson County Jefferson

24	2107CST	0	0	Hail (2.00)
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National Weather Service

Storm Data and Unusual Weather Phenomena



August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

Waukesha County

2 E Dousman	24	2133CST			0	0			Hail (0.75)
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Rock County

Beloit	24	2232CST			0	0	3.5M		Lightning
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A cluster of thunderstorms moved east and briefly pulsed to severe weather limits, and dumped large hail over parts of southeastern Wisconsin. Another thunderstorm's lightning struck a 139 year-old historical church in Beloit. The resultant fire destroyed the structure, and it's most of the contents were a total loss.



National Weather Service

Storm Data and Unusual Weather Phenomena



September 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

Marquette County

Westfield	01	1743CST			0	0		Hail (1.00)
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Columbia County

Friesland	01	1835CST			0	0		Hail (1.00)
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Columbia County

Portage	01	1840CST 1845CST			0	0		Hail (0.75)
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Dodge County

Randolph	01	1847CST			0	0		Hail (1.00)
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Dodge County

3 W Beaver Dam	01	1900CST			0	0		Hail (0.75)
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Columbia County

Arlington	01	1940CST			0	0		Hail (0.75)
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Washington County

4 S Hartford	01	1950CST			0	0		Hail (1.00)
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Waukesha County

Waukesha	01	2024CST			0	0		Hail (0.75)
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A broken line of thunderstorms, moving southeast at 35 mph through central Wisconsin, tapped colder air aloft to produce scattered occurrences of large hail during the evening hours over southcentral and southeast Wisconsin. In addition, downburst winds knocked down trees and power lines near Portage in Columbia county, and three quarters of an inch of rain fell in 20 minutes near Randolph in Dodge county.

Rock County

Johnstown Center	06	2244CST			0	0		Hail (1.00)
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Walworth County

Delavan to 2 S Elkhorn	06	2245CST 2250CST			0	0		Hail (0.75)
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Scattered thunderstorms moving east-southeast through southcentral Wisconsin around 20 mph eventually clustered in eastern Rock and Walworth counties. They dropped some large hail and produced gusty winds to 50 mph. In southern Walworth county, 1.6 inches of rain fell in one hour, resulting in minor street flooding.

WIZ065

Waukesha

13		1500CST 1700CST			0	0		Excessive Heat
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High pressure over the southeast part of the country allowed southwest winds to pull very warm air into southern Wisconsin. The maximum temperature in the city of Waukesha reached 91, breaking the old record of 89 set back in 1952.

WIZ063-065>066-069

Dane - Waukesha - Milwaukee - Rock

27		1500CST			0	0		Excessive Heat
28		0600CST						

Southwest winds pulled very warm air into southern Wisconsin, allowing some temperature records to be broken. Janesville (Rock Co.) recorded a new daily record high of 89, breaking the old one of 84. Milwaukee reached 88 degrees, breaking the old one of 86 set back in 1873. The city of Waukesha topped out at 89, breaking the old record of 83 set in 1973. September 1998 was the warmest September since 1971 in Waukesha. During the overnight hours, both Madison and Milwaukee only dropped to 71, which became a new record high minimums for those locations.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

WIZ046>047-051>052-
056>060-062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane -
Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

10	0900CST	4	14	10.4M	1.6M	High Wind
11	0200CST					

Screaming high winds raked all of southcentral and southeast Wisconsin's counties for about 17 hours, resulting in widespread damage to thousands of trees, homes, businesses, power poles, power lines, street lights, road signs, billboards, fences, flagpoles, barns, sheds, crops, boats, cars, trucks, campers, trains, airport hangers, and airplanes. Four people were killed, and 14 people were injured. Estimated monetary damages were \$10.31 million to property and \$1.625 million to crops. The sustained southwesterly winds of 30 to 40 mph gusted to 60 to 70 mph, with isolated locations having gusts to around 80 mph. These relentless winds eventually caused about 125,000 customers to lose electrical power. So many poles and lines were toppled that some customers were without power for 3 or 4 days! Preceding the powerful winds was a line of thunderstorms that dumped 1 to 2.5 inches of rain across the area. This resulted in some urban (street and basement) and small stream flooding in the Milwaukee to Kenosha area.

The responsible low pressure tracked from northern Kansas to northcentral Iowa to near Superior in northwest Wisconsin by mid-afternoon. Due to rapid intensification, the central pressure eventually dipped to 28.43 inches (963 millibars) in Albert Lea, MN, and Austin, MN. At Madison, the pressure dropped to 28.98 inches, in Milwaukee, 28.90 inches, in Fond du Lac, 28.95 inches, and 28.87 inches in Wisconsin Dells. WSR-88D Doppler radar wind speeds registered 65 kts (75 mph) 2000 feet above ground level and 120 kts (135 mph) at 15,000 feet over the NWS Forecast Office near Sullivan in eastcentral Jefferson County! Interestingly, a peak gust of 76 kts (87 mph) was recorded on top of the 15-story Atmospheric and Oceanic Sciences building on the UW-Wisconsin campus! This path of this low pressure was very similar to the path of an intense low pressure on November 10, 1975, whose winds generated 15 foot waves on Lake Superior, resulting in the sinking of a large ore boat.

Following is a county-by-county breakdown of additional specifics

1) Marquette Co: gust of 53 kts (61 mph).

2) Green Lake Co: barn was levelled on outskirts of Berlin. Shingles were ripped off a business in the city of Green lake. Light poles were bent by the wind in Berlin, resulting in damage to Christmas decorations.

3) Sauk Co: A shed was demolished in Baraboo area. A tree fell on a trailer near Lake Delton. Many trees and power lines downed in eastern part of county near the Wisconsin River. About 1000 customers without electrical power at one time. A gust of 56 kts (65 mph) was measured in Baraboo.

4) Columbia Co: a 50 year old woman drowned after being knocked by a high wind gust into the Wisconsin River. She was pulled underneath by an undercurrent in turbulent and wind-whipped waters in the Township of Dekorra. She was helping her husband load a pontoon boat onto a trailer. A semi truck was tipped over on I-94. In the city of Columbus, a home's brick chimney was damaged, and the roof of a balcony was ripped off. A wind gust of 57 kts (66 mph) was measured at Wisconsin Dells.

5) Iowa Co: an elderly man near Cobb suffered a head injury after being knocked down by a gust of wind. A semi truck driver was injured when his vehicle was flipped over by a wind gust on Highway 80 just north of Stephens. There were 5 other semi roll-overs in the county. In Dodgeville, an apartment building and hotel had roof damage, and a new home under construction was demolished. A barn collapsed in rural Hollendale near the intersection of Hwys 39 and F. A new building was torn up near Spring Green. A gust of 60 kts (69 mph) was measured in Barneveld, and 56 kts (64 mph) in Mineral Point. In northwest Iowa county, on a wind power tower, a gust of 69 kts (79 mph) was measured at the 40 meter level.

6) Dane Co: an 87 year-old man died after being hit by a car that was blown sideways by a wind gust at 515 pm on the north side of Madison. On the Capitol Square, a business had a window blown in. Several businesses in Mt. Horeb sustained wind damage. In Monona, a roof was torn off a multi-unit apartment building, and 4 other nearby buildings also had damage. A couple businesses in Stoughton had wind damage. Around 4pm a dozen semi trucks were flipped over on I-90/94, and several more on US18/151 and Hwy 51. Several barns in the county had wind damage. Some moored boats on Lake Kegonsa were pushed into each other, resulting in damage. Measured winds gusts include 57 kts (66 mph) at both Verona and Mt. Horeb, and 53 kts (61 mph) at Waunakee.

7) Lafayette Co: a large portion of the Darlington High School roof was ripped off around 1130 am. Elsewhere in the county, 15 farm buildings were damaged and another 5 destroyed. Five homes in the county sustained damage due to fallen trees, and 1 business suffered structural damage. Several county roads were blocked by tree debris.

8) Green Co: semi roll-overs were reported on US 11/81, and Hwy 81 in the town of Monroe. An airplane was flipped over at the Brodhead airport. A silo roof was blown off on County M about 4pm. Damage was inflicted on county salt sheds in New Glarus and Brodhead. About 5000 customers were without power at one time. Measured winds were 56 kts (64 mph) at Monroe and 50 kts (58 mph) in New Glarus.

9) Rock Co: in Beloit, 25 large trees were knocked down, resulting in damage to several homes. About 1/3 of the Janesville Parker



National Weather Service

Storm Data and Unusual Weather Phenomena



November 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

WISCONSIN, Southeast

High School roof was torn off by wind gusts. In Evansville, a couple businesses had blown-in windows, and siding was peeled off on 5 other buildings. In Edgerton, 2 homes sustained damage from fallen trees, and 5 businesses had siding peeled off. At one time, about 14,000 county electrical customers were without power. Measured wind gusts include 59 kts (68 mph) at the Rock County Airport about 930 am, and 56 kts (65 mph) up at Milton.

10) Fond du Lac Co: in the city of Fond du Lac, sheet metal and siding on a church steeple was peeled off by the wind, and over 100 homes had damage. In Eden, a shed was blown away. Two semi's were flipped by the wind on Hwy 41, and some cars were pushed into the ditch. In Oakfield, the roof of a pig barn was ripped off. About 2800 county electrical customers were without power at one time. Peak measured gusts were 67 kts (77 mph) in St. Peters, and 64 kts (74 mph) in Fond du Lac. Southeast of the city of Fond du Lac, on the ridge, a gust of 69 kts (79 mph) was measured on a wind power tower at the 40 meter level.

11) Sheboygan Co: a women in the city of Sheboygan was injured by flying glass debris after a window was blown out of a business. Two other city businesses suffered roof/sheet metal damage. A barn near Plymouth was levelled. A semi truck was tipped over on Hwy 23 west of Sunset Rd. Three homes in Sheboygan Falls were damaged by felled trees. A gust of 59 kts (68 mph) was measured in the city of Sheboygan.

12) Dodge Co: scattered damage was reported in all parts of the county. In Juneau, a roof was ripped off a business building. Three semi trucks were flipped over... 2 in the Horicon area and one near Hartford. About 2000 county customers were without electrical power at one time due to downed power lines. Two schools closed early. There was a multiple-vehicle accident near the intersection of Hwy 151 and 16-60 due to vehicles being pushed sideways by gusts. A gust of 58 kts (67 mph) was registered at the Juneau Airport. In eastcentral Dodge county, on a wind power tower, a gust of 70 kts (81 mph) was measured at the 40 meter level.

13) Washington Co: about 8000 customers lost electrical power at one time or another. Two semi trucks were flipped over on Hwy 45, resulting in the closure of the road. The county 911 center logged 54 call for damage assistance. A barn was blown down on Hwy 28 near Kewaskum. Several schools closed early.

14) Ozaukee Co: siding was ripped off several homes and telephone poles were snapped in Port Washington. In Belgium about 1/4 of a roof was torn off a building under construction. Several schools closed early in Mequon and Thiensville. A gust of 56 kts (65 mph) was measured in Port Washington.

15) Jefferson Co: a Ft. Atkinson women was injured after she was blown by a wind gust into the side of her home. At 1505CST a semi-truck driver was injured when his truck was flipped over on I-94 near the Hwy 26 interchange. Another semi was overturned by a gust on US 18 near Hwy 89. At least 17 homes in the county sustained damage from tree debris. Many acres of corn crop were flattened. A barn was blown across Hwy 106 east of Ft. Atkinson. About 6000 customers lost electrical power at one time or another. A concrete wall, part of a new grocery store In Ft. Atkinson, was blown down. A peak gust of 67 kts (77 mph) was measured at the Watertown Airport at 1336CST, and 59 kts (68 mph) at 0859CST. The NWS Office near Sullivan came in with 53 kts (61' mph).

16) Waukesha Co: this county was hard hit. Two women were injured in Muskego after a tree fell on their car. In New Berlin, a man was injured after his motorized garbage cart was rolled over by a wind gust. On Hwy J in the Town of Pewaukee, the driver of a car was injured after a tree fell on his car. At one time or another, about 15,000 customers were without electrical power in the county. A semi-truck was flipped over by a gust on I-94 near the Hwy 83 interchange. At least 3 barns in the county were badly damaged. In both Muskego and Sussex, two new walls at a school construction sites were toppled. A construction site on Hwy 36 near Burlington was badly damaged by the wind gusts. At the Waukesha Airport, where a gust of 54 kts (62 mph) was measured, 20 hanger doors were ripped off. A gust of 59 kts (68 mph) was measured elsewhere in the city of Waukesha. Several boats were damaged on county lakes due to large waves.

17) Milwaukee Co: this county was hard hit. An 87 year-old man died on November 16th, after being in a coma, as the result of head injuries received upon falling facefirst on his sidewalk on the 10th. Apparently, a wind gust ripped a door from his hand as he was opening it, causing him to lose his balance and fall. At the Southridge Mall, a women was injured in the head after being blown over by a powerful wind gust in the parking lot. Hundreds of trees were uprooted across the county, resulting in damage to dozens of homes, apartments, and businesses. At one time or another, about 20,000 customers lost electrical power. Traffic lights were knocked out of service at 75 intersections. A train sustained damage from tree debris while moving thru the northern part of the county. Significant damage was reported to gates, ground equipment, and signs at General Mitchell Int'l Airport. A peak gust of 70 kts (80 mph) was measured in Cudahy, 59 kts (68 mph) at the Milwaukee Airport, and 53 kts (61 mph) in downtown Milwaukee.

18) Walworth Co: a semi-truck driver was injured after his vehicle was flipped over by the wind on Hwy 11 near the Racine Co. line. At least 6 businesses and nursing homes in the county had roof damage. A semi-truck rollover on I-43 near the Hwy X interchange resulted in spilled fuel that closed the road. Several Whitewater buildings and a stadium had damage as winds gusted to at least 59 kts (68 mph). Walls were blown down at construction sites in East Troy and Elkhorn. A gust of 71 kts (82 mph) was measured at the Lake Geneva Airport.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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WISCONSIN, Southeast

19) Racine Co: a women was injured when a wind gust toppled a traffic signal light onto her vehicle near the intersection of Hwy 38 and MM. In Racine, a women was injured after a tree fell on her home. Elsewhere in Racine a police officer was injured by flying debris while out on a call. At Brown's Lake, a shed was destroyed. In Racine , a construction wall was blown down. Several other homes and businesses sustained damage from trees. A gust of 54 kts (62 mph) was measured near Racine.

20) Kenosha Co: a 16 year-old boy was electrocuted in Bristol as he tried to escape his car after a wind gust toppled a live electrical line on his car. A fire had started inside the vehicle. Near Salem on Hwy 50, a small car was partially airborne by wind gusts and blown into a ditch. A semi-truck was flipped over on I-94. The Kenosha Airport had a gust of 63 kts (72 mph), while near Salem a gust of 70 kts (81 mph) was measured. F50IW, M87VE, M87PH, M16VE

WIZ046>047-051>052-
056>060-062>072

**Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane -
Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

23	1200CST	0	0	Excessive Heat
30	2359CST			

A historical heat wave affected southcentral and southeast Wisconsin during the last three days of November, and extended into early December. Numerous record high temperatures and record high minimum temperatures were tied or broken. A jet stream pattern locked in over southern Canada assured that low pressure system tracked north of Wisconsin, allowing southern Wisconsin to experience south to southwest winds and sunshine in unheard of proportions. Much above normal temperatures, but not record-setting, actually occurred as early as November 22nd, the first day of a long string of days with daytime maximum readings in the 50s and 60s. The 64 degrees registered in Madison on the 29th was the warmest so late in the season. The new record maximum and high minimum readings in Milwaukee on the 29th are the warmest so late in the season.

Here's a breakdown on the records:

November 23...Sheboygan...new record maximum of 58.

November 25...Madison...new record high minimum of 44.

November 27...Madison...record maximum of 65 tied.

Fond du Lac...new record maximum of 64.

Janesville...new record maximum of 64.

November 28...Milwaukee...new record maximum of 65, new record high minimum of 44.

Madison...new record maximum of 62

Fond du Lac...new record maximum of 64.

Janesville...new record maximum of 64.

Lake Geneva...new record maximum of 67.

November 29...Milwaukee...new record maximum of 66, new record high minimum of 55.

Madison...new record maximum of 64, new record high minimum of 53 .

Janesville...new record maximum of 66.

November 30...Milwaukee...new record maximum of 63.

Madison...new record maximum of 63.



National Weather Service

Storm Data and Unusual Weather Phenomena



December 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

WIZ046>047-051>052-
056>060-062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane -
Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

01 0000CST
06 1000CST

0 0

Excessive Heat

A historical heat wave, which started in late November, 1998, continued into the early morning hours of December 6th over southcentral and southeast Wisconsin. Numerous new daily record maximum temperatures were set, as well as some new daily record high minimums. The length of the heat wave was an unbelievable 15 days, and involved daytime temperatures in the 50s and 60s, and overnight lows in the mid 30s to lower 50s. Normal highs are in the mid 30s and normal lows in the upper teens to mid 20s. The high of 64 in Milwaukee (Milwaukee Co.) on December 3rd became the warmest maximum reading ever recorded for the entire month of December. The high of 62 in Madison (Dane Co.) on December 5th tied the warmest maximum reading for the entire month of December. A high of 65 in Sheboygan (Sheboygan Co.) on December 3rd became the warmest maximum reading ever recorded for the entire month of December.

The record warmth allowed some plants to become active again. Some farmers noted that winter wheat started to sprout. There were numerous reports of dandelion weeds blooming, lilac bushes budding, and tulip flowers popping their stems up.

Here's a breakdown on the records:

December 3...Milwaukee...new daily record maximum of 64, and new record maximum for December.

Madison...new daily record maximum of 61, and lows of 43 tied daily record high minimum.

Racine...new daily record maximum of 65.

Sheboygan...new daily record maximum of 65, and new record maximum for December.

Kenosha...new daily record maximum of 64.

December 4...Milwaukee...new daily record high minimum of 46.

Madison...new daily record high minimum of 47.

December 5...Milwaukee...new daily record maximum of 61, and new daily record high minimum of 45.

Madison...new daily record maximum of 62, and new daily record high minimum of 52 which was the warmest so late in the season.

December 6...Milwaukee...new daily record maximum of 56.

Madison...new daily record maximum of 56.